

Curriculum Vitae

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Brief Bio

I hold a PhD in Nuclear Physics from Aarhus University, Denmark. For more than ten years, I was a frequent visitor at large international accelerator laboratories such as CERN in Switzerland where I led a number successful experimental collaborations, which have advanced our understanding of the nuclear processes that generate energy and transmute chemical elements in the interiors of stars. Eager to put my knowledge and analytical skills to use in a more applied setting, I joined the MERIDIAN project in 2018. Based at the Institute for Big Data Analytics at Dalhousie University, Canada, I am now leading a small team of data scientists and software developers in creating novel data analytics and modeling tools for use in underwater acoustics.

Employment History

2019–Present: Adjunct Professor at Faculty of Computer Science, Dalhousie University
2018–Present: Lead Acoustic Data Analyst at Institute for Big Data Analytics, Dalhousie University
2015–2018: Assistant Professor at Department of Physics and Astronomy, Aarhus University
2013–2015: Postdoc at Department of Physics and Astronomy, Aarhus University
2010–2013: Postdoc at TRIUMF

University Education

2006–2010: PhD Physics, Aarhus University
2005–2006: Fulbright student, University of Washington
2002–2005: BSc Physics and Mathematics, Aarhus University

Grants and Awards¹

2019: NVIDIA Accelerated Data Science GPU Grant, 3k
2015-2018: “Nuclear astrophysics at the precision frontier”, The Villum Foundation Young Investigator Programme, 580k
2010-2012: “Experiments in nuclear astrophysics with radioactive beams at the ISAC-II facility at TRIUMF”, The Villum Foundation Postdoc Fellowship, 190k
2007: Foreign Graduate Student Invitation Program Grant, Tokyo Institute of Technology, Japan
2005: The Danish-American Fulbright Commission, 17k
2005: Nordea Danmark-fonden, 4.0k
2005: Faculty of Science, Aarhus University, 1.9k
2005: Etatsråd CG Filtenborg og Hustru Marie Filtenborgs Studielegat, 1.0k
2005: Observator mag.scient Julie Marie Vinter Hansens Rejselegat, 1.0k
2002: International Physics Olympiad Honorable Mention

¹Grant amount in CAD

Publications

37 peer-reviewed research articles (12 first authorships), 23 conference proceedings, and 3 feature articles. 469 citations (377 without self citations), h -index of 12, and 8.23 citations per item.² A few key publications are listed below. For a complete list, see my ORCID profile at orcid.org/0000-0001-5843-7465.

- O. S. Kirsebom, *et al.*, 2019. *Discovery of an Exceptionally Strong β -Decay Transition of ^{20}F and Implications for the Fate of Intermediate-Mass Stars*, Physical Review Letters **123**, 262701. Citations: 0
- O. S. Kirsebom, *et al.*, 2018. *First Accurate Normalization of the β -delayed α Decay of ^{16}N and Implications for the $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ Astrophysical Reaction Rate*, Physical Review Letters **121**, 142701. Citations: 1
- O. S. Kirsebom, *et al.*, 2012. *Improved Limit on Direct α Decay of the Hoyle State*, Physical Review Letters **108**, 202501. Citations: 50
- O. S. Kirsebom and B. Davids, 2011. *One fewer solution to the cosmological lithium problem*, Physical Review C **84**, 058801. Citations: 35
- O. S. Kirsebom, *et al.*, 2011. *Precise and accurate determination of ^8B decay spectrum*, Physical Review C **83**, 065802. Citations: 18
- O. S. Kirsebom, *et al.*, 2010. *Breakup of ^{12}C resonances into three α particles*, Physical Review C **81**, 064313. Citations: 51
- O. S. Kirsebom, *et al.*, 2009. *Observation of γ -delayed 3α breakup of the 15.11 and 12.71 MeV states in ^{12}C* , Physics Letters B **680**, 44–49. Citations: 21

Software

- 2019: *ketos*, docs.meridian.cs.dal.ca/ketos/, F. Frazao and O. S. Kirsebom
- 2018: *simX*, [10.5281/zenodo.1320121](https://doi.org/10.5281/zenodo.1320121), M. Munch and J. H. Jensen and O. S. Kirsebom
- 2018: *Open R-matrix (ORM)*, [10.5281/zenodo.1174079](https://doi.org/10.5281/zenodo.1174079), M. Munch and O. S. Kirsebom and J. Refsgaard

Talks

Numerous (> 50) presentations at international conferences and workshops including several invited talks. For a complete list, see [oliskir.github.io](https://github.com/oliskir).

Spokespersonships (P.I.)

- 2015–2018: *Search for the 2nd-forbidden ground-state transition in the β decay of ^{20}F* , JYFL
- 2015–2018: *Absolute measurement of the $\beta\alpha$ decay of ^{16}N* , ISOLDE
- 2012–2015: *β -delayed α -decay study of ^{16}N using the implantation method*, KVI
- 2011–2015: *Lifetime Measurement of the 7.786 MeV State in ^{23}Mg* , TRIUMF

Teaching

- 2013–2017: Extracurricular programme for 1st-year students, Coordinator
- 2015: Nuclear astrophysics graduate course, Lecturer
- 2014: Electromagnetism laboratory course, Coordinator
- 2006–2010: Physics and mathematics undergraduate courses, Teaching Assistant

²Source: Web of Science, 2020.01.03.

Student Supervision

2019–2020: Xuhui Liu, MSc Computer Science, Dalhousie University (co-supervisor)

2016–2017: Helle Bisgaard Sørensen, MSc Physics, Aarhus University

2014–2015: Sofie Tilbæk Nielsen, BSc Physics, Aarhus University

Conference and Workshop Organization

21–22 Nov 2019: Organizer of the workshop “**Detection and Classification in Marine Bioacoustics with Deep Learning**” with approx. 30 participants from Canada, the U.S. and Europe.

Academic Services

2016–2018: Member of the Liaison Committee at the Department of Physics and Astronomy, Aarhus University

Refereeing

Physics Review Letters, Physical Review C, Hyperfine Interactions, Methods in Ecology and Evolution.

Professional Memberships

2018–Present: Member of the Canadian Acoustical Association

2013–2018: Member of the Danish Physical Society